

**SECRET**

OXC-4814-83

Copy 10 of 10

15 OCT 1963

**MEMORANDUM FOR THE RECORD**

**SUBJECT : Model 220 Tracker - Status and Operational Outline**

**Status of Model 220 tracker systems for Ops-INS test checking:**

1. 4- Model 220 tracker camera's with electric clock, frame marker and 80 mm lens.
  - 6- 70 mm magazines for Model 220 tracker units.
  - 4- Intervalometer boxes with driver panel control; 6, 12, 18 second timing.
  - 4- Driver Panels with run, two minute operate and mark modes.
  - 4- Radio interference filters.
  - 4- Interconnecting cables.
2. Equipment has been delivered  25X1

**Tracker Camera:**

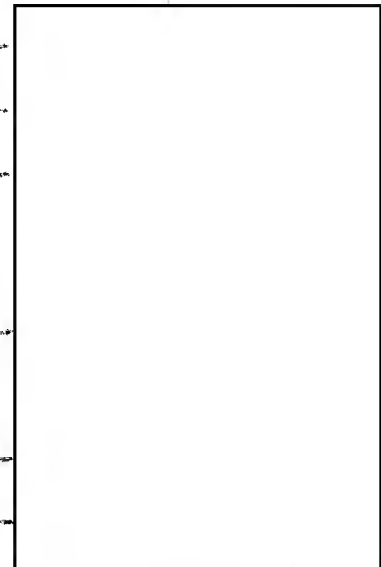
2- Tracker Units	Locate-
1- " "	" "
1- " "	" "

**Magazines:**

6- Magazine Units	Locate-
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**Material 70mm:**

5- Rolls	Locate-
120- "	" "



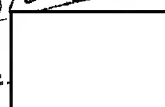
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DATE: 30/12

BY: [signature]

REASON: [illegible]



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**Intervalometers:**

2- Intervalometer Units      Locate-       25X1

modified assemblies. Intervalometer start is controlled from the Nav Mode. Special frame advanced and marked automatically by depressing the Store button.

2- Intervalometer Units      Locate-       25X1

Standard assemblies. Intervalometer controlled by the driver panel. Nav Mode advances one frame only. No interconnection with Fix or Store buttons.

25X1

**Shock Mounted Frames:**

2- Frames      Locate-

1- "      Locate-

1- "      Locate-

**Driver Control Panel:**

3- Panels      Locate-

For use with the standard intervalometer box only.

1- Panel      Locate-       25X1

Altered for bench testing modified intervalometer boxes.

**Radio Interference Filters:**

4- Filters      Locate-       25X1

**Intervalometer-Filter Interconnecting Cables:**

4- Cables      Locate-       25X1

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**Vehicle Interface Cable:**

**1- Cable**

Locate-

25X1

To be used with no payload and Type III lower hatch. Additional cables to be provided as required. ( Interface cable to be used with Type II equipment to be fabricated when the Type II configuration equipment is installed. )

**Lower Hatch, Type III:**

**1- Hatch**

Locate-

25X1

Tracker brackets installed, no windows available at this time.

3. The first tracker unit has been ground checked in Article 127. (Note: The required vehicle and INS wiring changes have been completed in Article 127 ONLY.) If the tracker system is to be used before the return of the Type II package/field crew, installation of the tracker should be coordinated with

25X1

**4. General outline of the tracker installation:**

1. The tracker system may only be installed in the vehicles which have the required vehicle and INS wiring changes.
2. Type III lower hatch with special support bracket should be made ready the day before a flight. Tracker camera, shock mounted frame, radio filter, inter-valometer box and interconnecting cable should be placed on the hatch.
3. The camera electric clock should be time backed with Ops reference.
4. Select and install desired lens filter. When using Type 4400 material, the yellow filter will normally be used. Set exposure time for 1/500 second. F/8 setting is recommended for initial testing of the system.

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3. Select the desired intervalometer time of 6, 12, or 18 seconds with the associated time switch.
4. Install interface cable in the Q bay. Connectors Q4, Q5, and Q6 should be mated, and the cable secured in place.
7. The tracker magazine should be loaded with a 190 foot roll of 70mm Type 4400 material [redacted] by the Type II or Process personnel. [redacted] After the magazine has been loaded, it will be taken to the hangar and mated with the tracker camera on the lower hatch.
8. Clean inside surface of window and camera lens and filter with soft cloth and a one to one solution of alcohol and water.
9. Bring lower hatch into position under the Q bay and raise to a point where there is room remaining to reach in the aft end of the assembly and mate the tracker-vehicle interface cable with the intervalometer box. (Note. Once the interface connector is mated with the intervalometer box, the equipment will operate automatically when ever the Nav Mode signal is present from the INS equipment.)
10. Close and secure the bottom hatch assembly.
11. The tracker camera requires the following inputs in order to operate. Hence, the associated circuit breakers must be closed.
  - a. Phase A, 400 cycle power from inverter #2 (Q bay breakers)
  - b. 28 V DC to Q bay from the TE supply.
  - c. Nav, Store and VCM lines from the INS connector.
12. Clear external surface of the tracker window.

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25X1

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13. Operation of the camera is automatic. When the INS Nav Mode is initiated the camera will start, and continue to be sequenced by the intervalometer until the Nav Mode is terminated. Material supply is equivalent to approximately 910 frames.

When the Fix-Store button is depressed, the camera will automatically advance one frame, and a special frame mark will be recorded on this frame. The time clock is recorded on all frames.

14. No tracker camera malfunction indication is provided for the driver.

At the end of the mission, the tracker should be unloaded as follows:

1. Lower the bottom hatch until the intervalometer mating connector can be reached from the aft end of the hatch. Remove connector.
2. Remove film magazine and forward to [ ] for processing. (Processing Note. Material Type 4400, Size 70mm by 100 feet, process "full" with observer control when required).
3. Replace protection covers on film magazine and camera shutter assembly. Cover on shutter assembly is most important because of the extremely fragile focal plane shutter curtains.
4. Remove vehicle interface cable from Q bay and store.
5. If the special tracker lower hatch is to be stored any place other than in [ ] it is recommended that the tracker camera be removed from the lower hatch mounting frame and stored in the Ops building or in [ ].
6. Evaluation of the processed material to be coordinated with the Ops and INS groups.
7. Cover windows with breakage protection cover. Cover intervalometer box, tracker and frame with plastic or cloth for storage.

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5. Modification of the remaining intervalometer boxes, lens change, etc. may be coordinated through [redacted]

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Wiring schematic of the vehicle interface cable is enclosed for reference.

An additional instruction manual, trouble shooting and maintenance manual will be provided within 30 days. Manual completion delay has been caused by the changing tracker system and equipment specifications.

SIGNED

[redacted]

DD/OSA

25X1

[redacted] :DD/OSA: [redacted] (10 October 1963)

**Distribution:**

- Cy 1 - AD/OSA
- 2 - D/TECH/OSA
- 3 - CD/OSA
- 4 - MD/OSA
- 5 - D/FA/OSA
- 6 - OD/OSA
- 7 - PS/OSA
- 8 - DD/OSA
- 9 - DD/OSA (chronos)
- 10 - RB/OSA

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